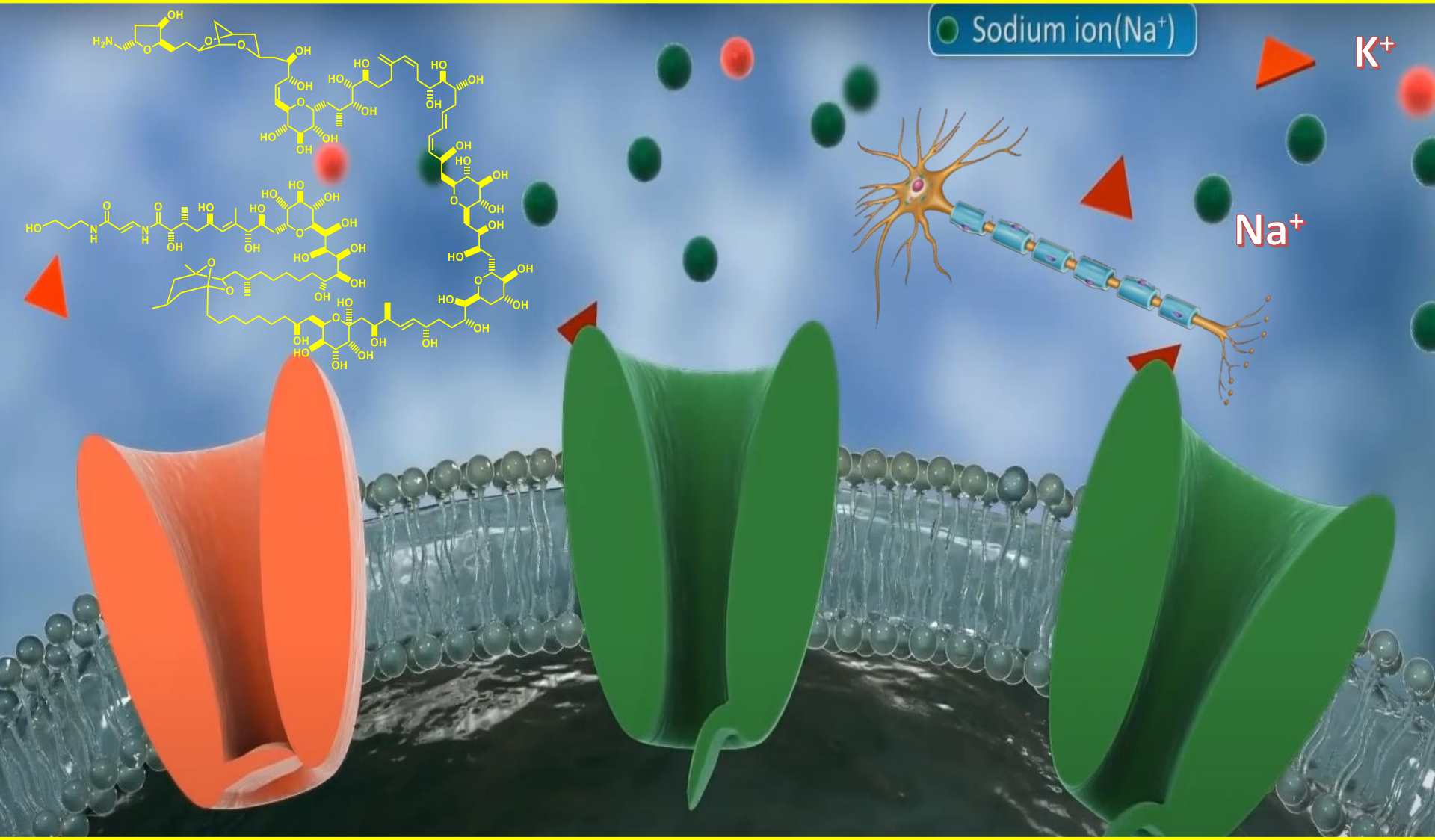
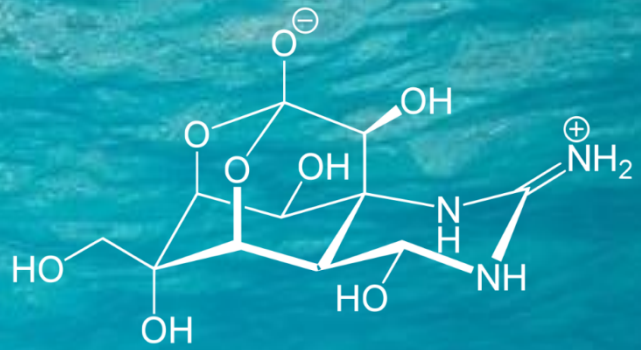
Marine Toxins



Dr. Omar M. Sabry

Tetrodotoxin {Halneuron®}



Puffer fish

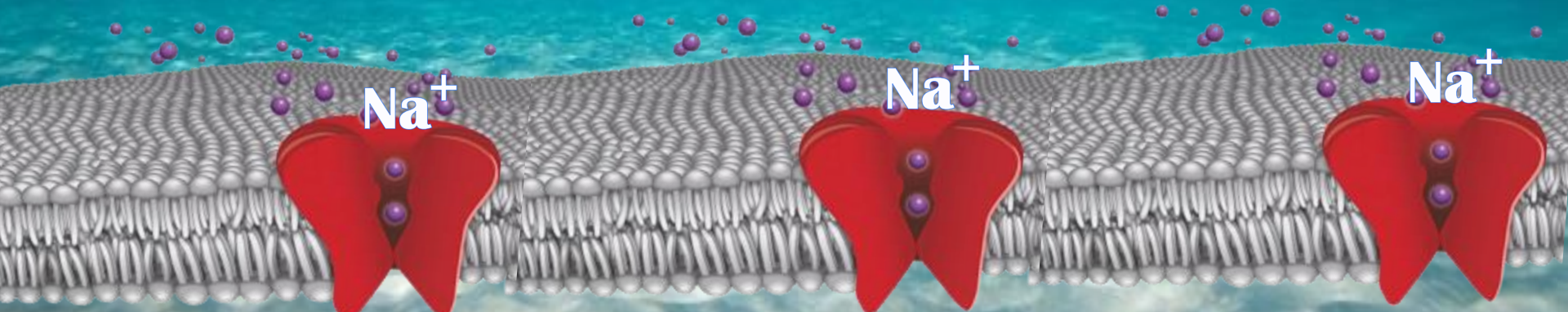
Tetraodontiformes

Tetrodotoxin

{Guanidine Alkaloid}

Sodium Channel Blocker

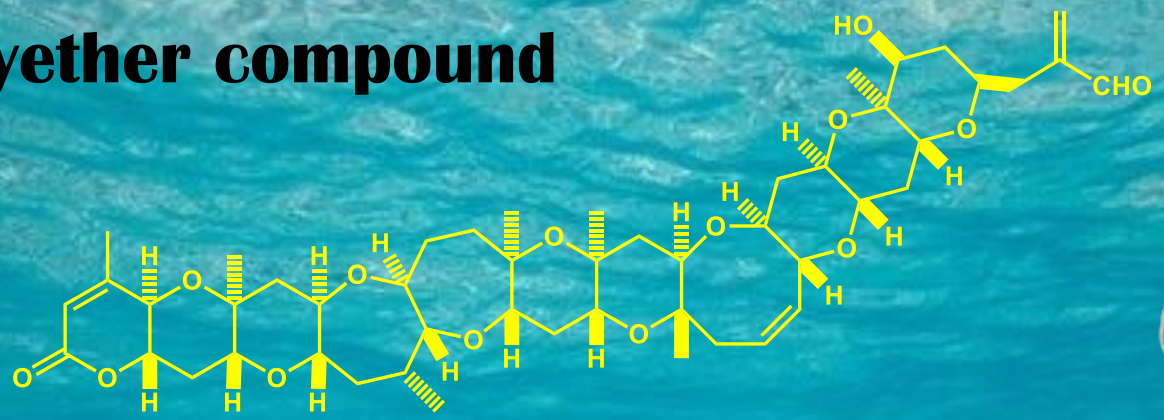
Local Anesthetic



Brevetoxin B

Cyclic polyether compound

1981

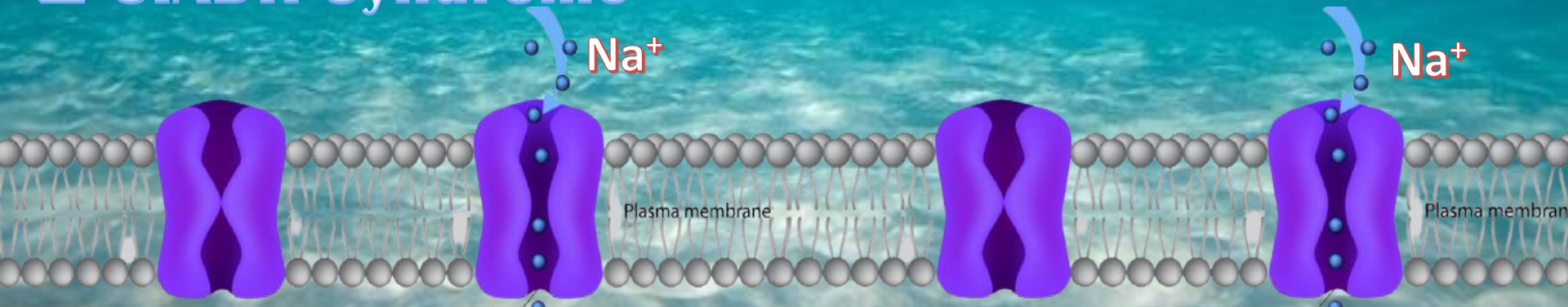


Dinoflagellate {*Gymnodinium breve*}

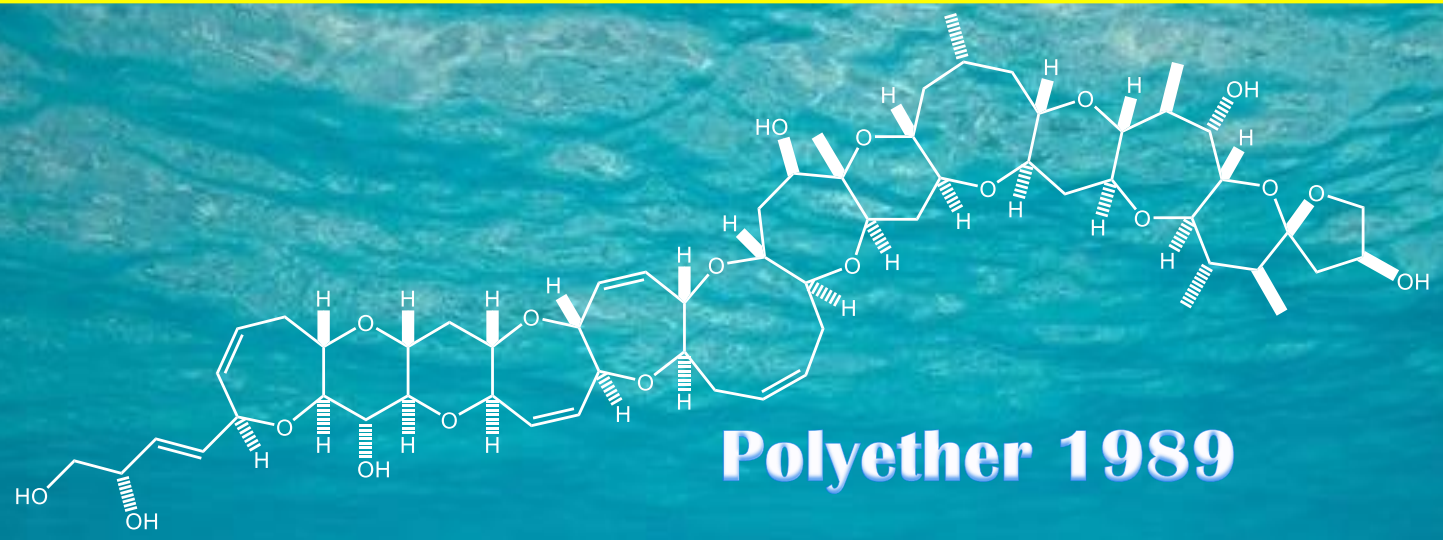
True Producer

Shellfish

- **Sodium influx**
- **SIADH Syndrome**



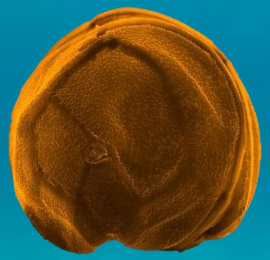
Ciguatoxin



Polyether 1989

Gamberdiscus toxicus

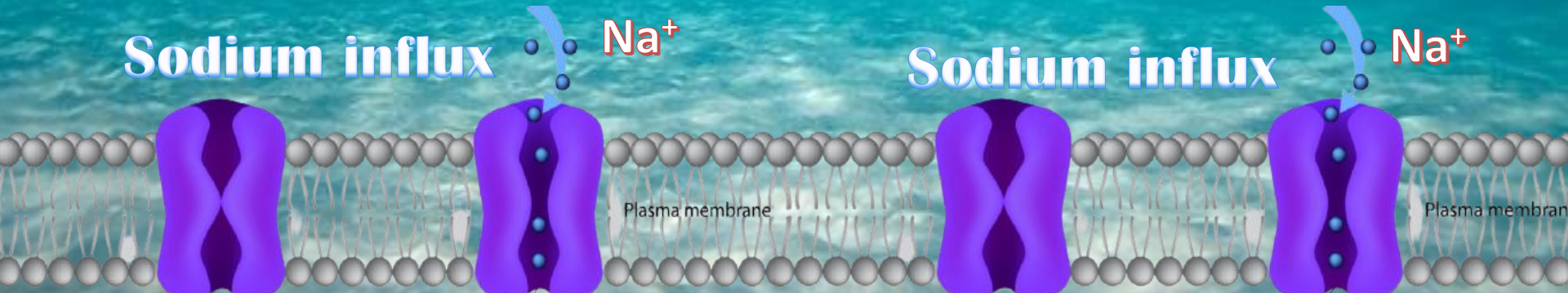
True Producer



Moray Eel

Sodium influx

Na^+



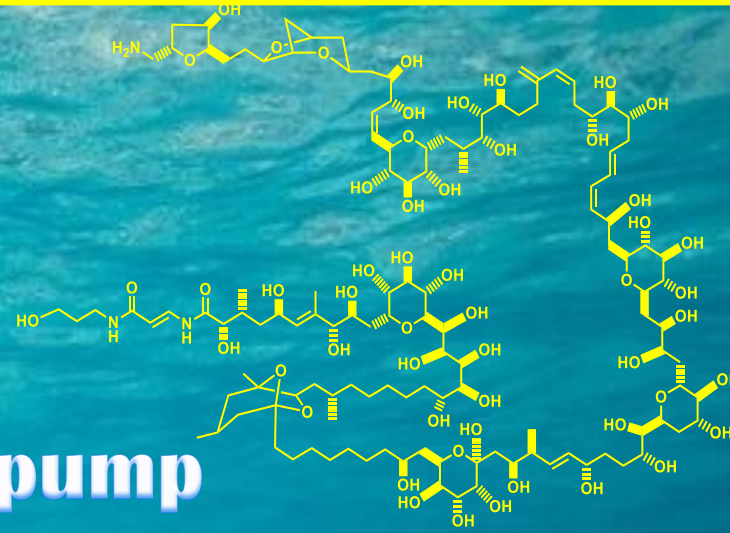
Sodium influx

Na^+

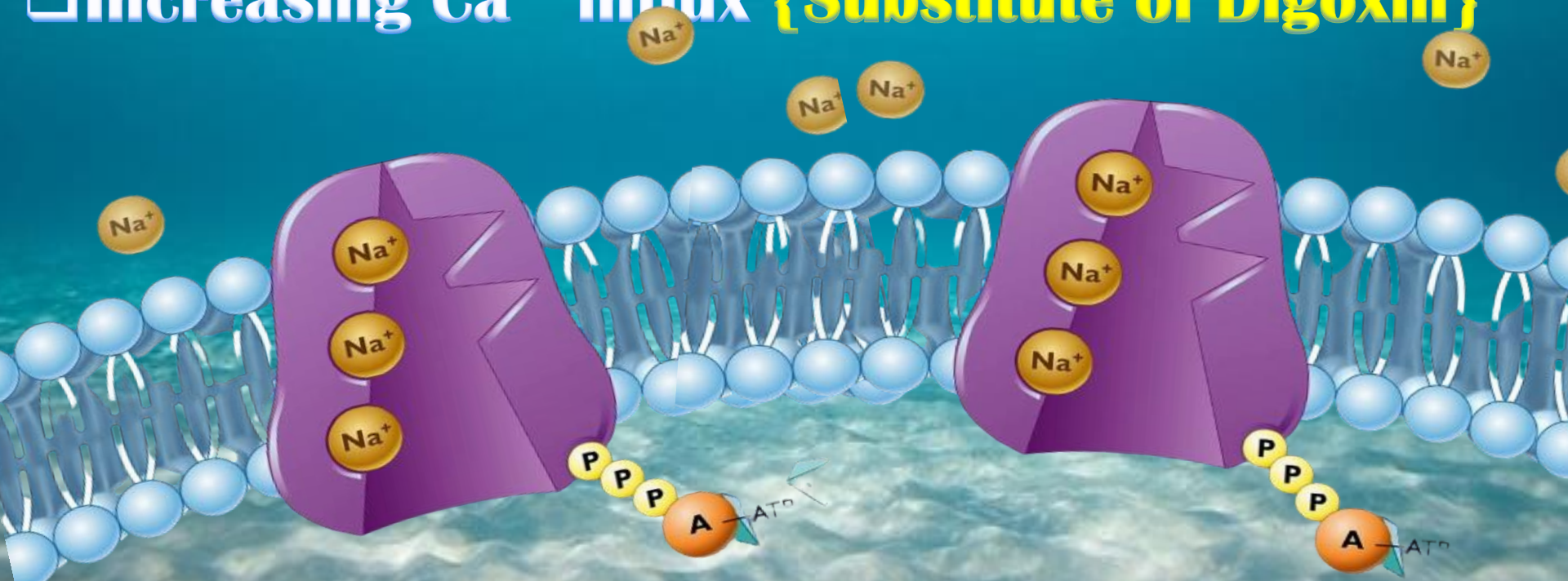
Palytoxin

Polyether 1981

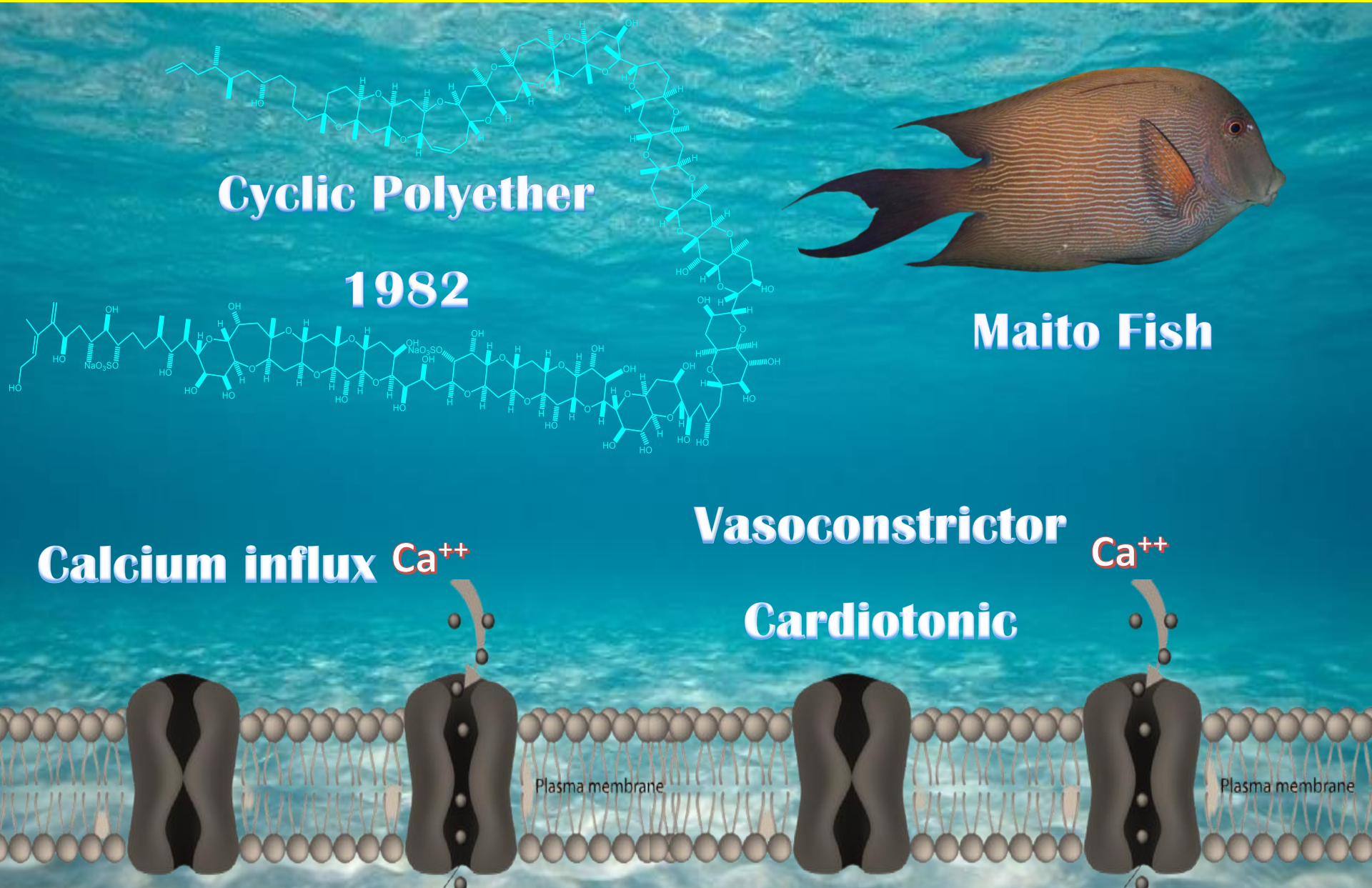
Palythoa toxicus



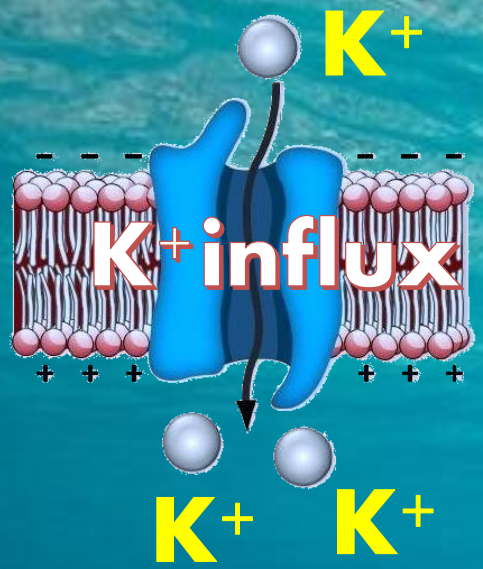
- Inhibition of ATPase Na^+/K^+ pump
- Increasing Ca^{++} influx {Substitute of Digoxin}



Maitotoxin


Cyclic Polyether
1982
Maito Fish
Calcium influx
Ca++
Vasoconstrictor
Cardiotonic
Ca++
Plasma membrane
Plasma membrane

Jellyfish Toxins قنديل البحر



Intense pain, itching, rash, and raised welts

ألم شديد - حكة - طفح جلدي - وكدمات بارزة

Mixture Polypeptides

Main Polypeptide 47 amino acids

Jellyfish toxins cause K^+ influx